

REMARKS

Claims 1-16 were pending in the current application and were examined. By this amendment, claims 1-3, 7-11, 14, and 16 are amended, claims 4-6 and 15 are cancelled without prejudice or disclaimer, and new claims 17-24 are added. Upon entry of this paper, claims 1-3, 7-11, 14, 16, and 7-24 will be pending in the application for further examination. Favorable consideration and allowance of the pending claims are respectfully requested.

Applicants have made the amendments to claims herein in an effort to expedite prosecution and to reduce costs associated with prosecution. The claim amendments are made without prejudice or disclaimer to the subject matter contained in original filed claims and without conceding or taking any position as to the merits of the rejections of any of the rejected claims. Applicants reserve the right to refile the originally-filed claims and contest rejections thereof in one or more subsequent applications. By making these claim amendments herein, however, Applicant does not necessarily agree or acquiesce with each statement in the Office action as to why claims are allowable/allowed or why claims have been rejected.

The claim amendments herein have rendered moot all of the Examiner's rejections to the claims. Accordingly, Applicant respectfully requests the Examiner to issue a notice of full allowance for the application.

REJECTION UNDER 35 U.S.C. § 112

Claims 8 and 11 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

The amendments to claims 8 and 11 have rendered moot the rejections claims 8 and 11 under 35 U.S.C. § 112. Withdrawal of these rejections is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-3 and 7-16 stand rejected under 35 U.S.C. § 103(a)¹ as being unpatentable over Japanese Patent Abstracts to document no. JP11298231A (the '231 reference) in view of Japanese Patent Abstracts to document JP200236209 (the '209 reference). This rejection is respectfully traversed.

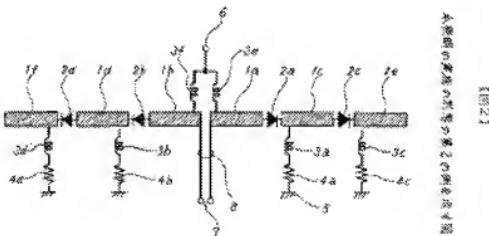
As amended, independent claim 1 recites an antenna device for a portable radio communication device operable in at least a first and a second frequency band, the antenna device comprising: a first electrically conductive radiating element having a feeding portion connected to a feed device of the radio communication device; a second electrically conductive radiating element having a grounding portion connectable to ground; a controllable switch arranged between the first and second radiating elements for selectively interconnecting and disconnecting the radiating elements, the state of the switch being controlled by means of a control voltage input; a first filter arranged between the feeding portion and the control voltage input, wherein the first filter is arranged to block radio frequency signals; a grounding portion of the first radiating element; a high pass filter arranged between the grounding portion of the first radiating element and ground; and a band-stop filter connected to the grounding portion of the second radiating element and being connectable to ground, the band-stop filter having a stop band at the lower of the first and second frequency bands; wherein the first and second radiating element are generally planar and arranged at a predetermined distance above a ground plane.

Accordingly, Applicants have amended independent claim 1 to include a band-stop filter previously recited in now-cancelled claim 6. In rejecting claim 6, however, the Patent Office failed to identifying any specific portion or component in either of the '231 or '209 references as being a band-stop filter. Indeed, the Patent Office only makes a

¹As indicated in MPEP § 2143.01(IV), a statement that it would have been obvious to a person having ordinary skill in the art (at the time the claimed invention was made) to modify the prior art merely because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. See, *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). Rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. See, *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 385 (2007).

passing reference to claim 6 in the introductory statements of the 103 rejection, but claim 6 or the subject matter thereof (a band-stop filter) is never mentioned again in the Office Action.

Should the rejection of amended claim 1 be maintained, Applicants respectfully requests that the Patent Office articulate why it would be obvious to use a band-stop filter and also identify what specific components in the '231 or '209 references the Patent Office is relying upon as being a band-stop filter. This information is needed in order to provide Applicants with a full and fair opportunity to respond to the rejection. Otherwise, Applicants only option is to try and guess as to why the Patent Office rejected claim 6 and its recited subject matter of a band-stop filter. Presently, the only filters identified in the Office Action are the components 3a and 3e from the '209 reference. But neither of these components 3a and 3e from the '209 reference are band-stop filters. Instead, the '209 reference at paragraph [0024] identifies components 3a and 3e as "the choke coil for a high frequency cut." See, also, FIG. 2 of the '209 reference below. But none of the choke coils for a high frequency cut 3a or 3e of the '209 reference operate as a band-stop filter which claim 1 recites has a stop band at the lower of the first and second frequency bands.



Also, the '231 reference merely discloses a microstrip antenna including first and second radiation elements 101, 102 in parallel with a ground plate 104. The first and second radiation elements 101, 102 are connected by a switching element 105. The

second radiating element includes a portion connected to ground through a capacitor 201. But the '231 reference does not disclose or teach the state of the switch being controlled by means of a control voltage input. The '231 reference also does not teach or disclose a first filter arranged between the feeding portion and the control voltage input. Further, the '231 does not disclose or teach a band-stop filter connected to a grounding portion of a second radiating element and being connectable to ground, the band-stop filter having a stop band at the lower of first and second frequency bands.

The '209 reference was cited by the Patent Office to overcome some of these deficiencies of the '231 reference. The '209 reference discloses a dipole or monopole antenna with radiation elements 1a, 1c connected by a diode switch circuit 2a. The conductive state of the diode switch circuit 2a is controlled by voltage input (at 6). A filter circuit 3a coupled between the radiation element 1a and the control voltage input 6. But the '209 reference does not disclose or teach a band-stop filter connected to a grounding portion of a second radiating element and being connectable to ground, the band-stop filter having a stop band at the lower of first and second frequency bands as recited by claim 1.

Assuming *arguendo*, that it would have been obvious to combine the teachings of the '231 and the '209 references as suggested by the Examiner (which the Applicants do not admit), such combination still fails to disclose, teach, or suggest a band-stop filter connected to a grounding portion of a second radiating element and being connectable to ground, the band-stop filter having a stop band at the lower of first and second frequency bands as recited by claim 1. Furthermore, neither the '231 reference, nor the '209 reference provides any motivation for a person skilled in the art to add a band-stop filter having a stop-band at the lower of the first and second frequency bands as recited by claim 1.

Applicants' published application 2006/0262015 at FIG. 8 (reproduced below) and paragraph [0049] disclose an example embodiment in which a band-stop filter essentially blocks signals at the lower frequency band while also essentially short-circuiting to ground signals at the higher frequency band. With this configuration, impedance matching with the output stage supplying the RF signal is further improved for the higher frequency band. This is due to a reactive component of the circuit, and in

particular the switch or diode, since the diode behaves like a capacitor when the diode is in an conductive state. Moreover, using the band-stop filter, the impedance matching is controlled to vary between the lower and the higher frequency bands.

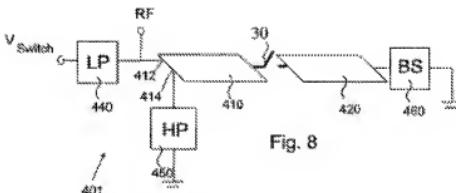


Fig. 8

If a person skilled in the art is given the task of, starting from reference '231, improving impedance matching in the higher frequency band, there is nothing that motivates placing a band-stop filter having a stop-band at the lower of the first and second frequency bands between the second radiating element and ground. Moreover, this feature is nowhere to be found in either of the '231 or '209 references, which is further evidence that the amended claim 1 is both novel and inventive.

In addition, modifying the '231 antenna to include all of the features (e.g., band-stop filter) recited in independent claim 1 would require a substantial reconstruction or redesign of the '231 antenna², might render it unsatisfactory for its intended use or change the principle of its operation.³

For at least these reasons, independent claim 1 is patentable over the combination of the '231 and '209 references. The Examiner is respectfully requested to reconsider and withdraw the rejection of amended independent claim 1.

Claims 2-3, 7-11, 14, 16, and 17-24 depend from claim 1 and are allowable for at least the same reasons. Accordingly, the Examiner is also requested to withdraw the rejection of dependent claims 24, 7-11, 2-3 and 7-24.

Moreover, the '231 and '209 references do not disclose or teach each of the features recited in dependent claims 2-3, 7-11, 14, 16, and 17-24 in combination with

²See MPEP § 2143.01, Section VI (an obvious rejection is not proper where the modification would require a substantial reconstruction or redesign of the elements shown in the primary reference).

³See MPEP § 2143.01, Sections V and VI (If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose or would change the principle of operation of the prior art invention, then there is no suggestion or motivation to make the proposed modification).

the features recited in claim 1 from which they depend. For example, claim 24 recites that the band-stop filter is operable for blocking signals at the lower of the first and second frequency bands, while short-circuiting to ground signals at the higher of the first and second frequency bands. This is not disclosed, taught, or suggested by the '231 and '209 references. Instead, the '209 reference at paragraph [0024] identifies components 3a and 3e as "the choke coil for a high frequency cut." For this additional reason, Applicants respectfully requests reconsideration and withdrawal of this rejection of claim 24.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7500.

Applicants believe that no fee is due in connection with this filing. If, however, Applicants owe any fee(s), the Commissioner is hereby authorized to charge the fee(s) to Deposit Account No. **08-0750**. In addition, if there is ever any other fee deficiency or overpayment under 37 C.F.R. §1.16 or 1.17 in connection with this patent application, the Commissioner is hereby authorized to charge such deficiency or overpayment to Deposit Account No. **08-0750**.

Respectfully submitted,

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